

A-8753X
PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Gerald J. BANKS

Appln. No.: 10/188,835

Group Art Unit: 2824

Filed: July 5, 2002

For: MEMORY APPARATUS INCLUDING PROGRAMMABLE NON-VOLATILE
MULTI-BIT MEMORY CELL, AND APPARATUS AND METHOD FOR
DEMARCATING MEMORY STATES OF CELL

* * *

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
Washington, D.C. 20231

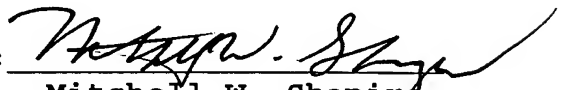
Sir:

Applicant wishes to make of record the documents cited
in predecessor Application Nos. 10/428,732 filed May 5,
2003, 10/160,402 filed June 4, 2003, 09/794,041 filed
February 28, 2001, 09/493,138 filed January 28, 2000,
09/195,201 filed November 18, 1998, 08/911,731 filed August
15, 1997, 08/410,200 filed February 27, 1995, 08/071,816
filed June 4, 1993, and 07/652,878 filed February 8, 1991
whether cited by Applicant or by the Patent Office. The
documents are listed on the attached Form-1449 and include
all citations through AS on sheet 11 of the List. Document

AT on sheet 11 is the publication of the parent application.

The Commissioner is hereby authorized to charge to Deposit Account No. 50-1165 any fees that may be required by this paper and to credit any overpayment to that Account.

Respectfully submitted,

By: 
Mitchell W. Shapiro
Reg. No. 31,568

MWS:sjk

Miles & Stockbridge P.C.
1751 Pinnacle Drive
Suite 500
McLean, Virginia 22102-3833
(703) 903-9000

March 25, 2004

FORM PTO-1449

LIST OF DOCUMENTS CITED BY APPLICANT

Atty. Docket No.

A-8753X

Serial No.

Applicant

Gerald J. BANKS

Filing Date

Herewith

Group

U. S. PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Name	Class	Sub-class	Filing Date
	AA	4,192,014	03/04/80	Craycraft	365	104	
	AB	4,357,685	11/02/82	Daniele et al.	365	189	
	AC	4,964,079	10/16/90	Devin	365	168	
	AD	5,172,338	12/15/92	Mehrotra et al.	365	185	
	AE	5,262,984	11/16/93	Noguchi et al.	365	185	
	AF	3,801,965	04/02/74	Keller et al.	340	173R	
	AG	4,004,159	01/18/77	Rai et al.	307	238	
	AH	4,054,864	10/18/77	Audaire et al.	340	173R	
	AI	4,090,258	05/16/78	Cricchi	365	184	
	AJ	4,122,541	10/24/78	Uchida	365	154	
	AK	4,139,910	02/13/79	Anantha et al.	365	183	

FOREIGN PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Country	Class	Sub-class	Translation
	AL	WO82/02276	07/08/82	WIPO			
	AM	WO82/02976	09/02/82	WIPO			
	AN	WO90/01984	03/08/90	WIPO			
	AO	2 630 574	10/27/89	France			Abstract
	AP	0 390 404	10/03/90	Europe			
	AQ						

OTHER (including author, title, date, pertinent pages, etc.)

	AR	M. Bauer et al., A Multilevel-Cell 32Mb Flash Memory, 1995 IEEE International Solid-State Circuits Conference, Session 7, Paper TA7.7.
	AS	John A. Bayliss et al., The Interface Processor for the 32b Computer, 1981 IEEE International Solid-State Circuits Conference, February 1981, at 116-117.

Examiner

Date Considered

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449 <u>LIST OF DOCUMENTS CITED BY APPLICANT</u>	Atty. Docket No. A-8753X	Serial No.
	Applicant Gerald J. BANKS	
	Filing Date Herewith	Group

U. S. PATENT DOCUMENTS							
Examiner Initial		Document Number	Date	Name	Class	Sub-class	Filing Date
	AA*	4,149,270	04/10/79	Cricchi et al.	365	222	
	AB*	4,181,980	01/01/80	McCoy	365	45	
	AC*	4,272,830	06/09/81	Moench	365	45	
	AD*	4,287,570	09/01/81	Stark	365	104	
	AE*	4,300,210	11/10/81	Chakravarti et al.	365	45	
	AF*	4,306,300	12/15/81	Terman et al.	365	45	
	AG*	4,327,424	04/27/82	Wu	365	104	
	AH*	4,388,702	06/14/83	Sheppard	365	104	
	AI*	4,415,992	11/15/83	Adlhoch	365	94	
	AJ*	4,449,203	05/15/84	Adlhoch	365	104	
	AK*	4,462,088	07/24/84	Giuliani et al.	365	105	

FOREIGN PATENT DOCUMENTS							
Examiner Initial		Document Number	Date	Country	Class	Sub-class	Translation
	AL*						
	AM*						
	AN*						
	AO*						
	AP*						
	AQ*						

OTHER (including author, title, date, pertinent pages, etc.)		
AR*	Christoph Bleiker & Hans Melchior, A Four-State EEPROM Using Floating-Gate Memory Cells, IEEE Journal of Solid-State Circuits, Vol. SC-22, No. 3, June 1987, at 260-263.	
AS*	Raymond A. Heald & David A. Hodges, Multilevel Random-Access Memory Using One Transistor Per Cell, IEEE Journal of Solid-State Circuits, Vol. SC-11, No. 4, August 1976, at 519-528.	

Examiner	Date Considered
----------	-----------------

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449

LIST OF DOCUMENTS CITED BY APPLICANT

Atty. Docket No.

A-8753X

Serial No.

Applicant

Gerald J. BANKS

Filing Date

Herewith

Group

U.S. PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Name	Class	Sub-class	Filing Date
	AA^	4,495,602	01/22/85	Sheppard	365	104	
	AB^	4,503,518	03/05/85	Iwahashi	365	104	
	AC^	4,558,241	12/10/85	Suzuki et al.	307	530	
	AD^	4,578,777	03/25/86	Fang et al.	365	184	
	AE^	4,586,163	04/29/86	Koike	365	104	
	AF^	4,627,027	12/02/86	Rai et al.	365	45	
	AG^	4,653,023	03/24/87	Suzuki et al.	365	104	
	AH^	4,661,929	04/28/87	Aoki et al.	365	189	
	AI^	4,709,350	11/24/87	Nakagome et al.	365	45	
	AJ^	4,733,394	03/22/88	Giebel	371	21	
	AK^	4,771,404	09/13/88	Mano et al.	365	189	

FOREIGN PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Country	Class	Sub-class	Translation
	AL^						
	AM^						
	AN^						
	AO^						
	AP^						
	AQ^						

OTHER (including author's name, date, and document type, etc.)

	AR^	David A. Rich, A Survey of Multivalued Memories, IEEE Transactions on Computers, Vol. C-35, No. 2, February 1986, at 99-106.
	AS^	R.S. Withers et al., Nonvolatile Analog Memory in MNOS Capacitors, IEEE Electron Device Letters, Vol. EDL-1, No. 3, March 1980, at 42-45.

Examiner

Date Considered

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449

LIST OF DOCUMENTS CITED BY APPLICANT

Atty. Docket No.

A-8753X

Serial No.

Applicant

Gerald J. BANKS

Filing Date

Herewith

Group

U.S. PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Name	Class	Sub-class	Filing Date
	AA#	4,799,195	01/17/89	Iwahashi et al.	365	185	
	AB#	4,847,808	07/11/89	Kobatake	364	104	
	AC#	4,853,892	08/01/89	Hori	365	49	
	AD#	4,890,259	12/26/89	Simko	365	45	
	AE#	4,914,631	04/03/90	Johnson et al.	365	189.11	
	AF#	4,989,179	01/29/91	Simko	365	45	
	AG#	5,021,999	06/04/91	Kohda et al.	365	168	
	AH#	5,043,940	08/27/91	Harari	365	168	
	AI#	5,095,344	03/10/92	Harari	357	23.5	
	AJ#	5,163,021	11/10/92	Mehrotra et al.	365	185	
	AK#	5,258,958	11/02/93	Iwahashi et al.	365	210	

FOREIGN PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Country	Class	Sub-class	Translation
	AL#						
	AM#						
	AN#						
	AO#						
	AP#						
	AQ#						

OTHER PUBLISHED MATERIALS (Draw, Specification, Pages, etc.)

	AR#	
	AS#	
	AT#	

Examiner

Date Considered

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449

LIST OF DOCUMENTS CITED BY APPLICANT

Atty. Docket No.

A-8753X

Serial No.

Applicant

Gerald J. BANKS

Filing Date

Herewith

Group

U. S. PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Name	Class	Sub-class	Filing Date
	AA'	5,268,870	12/07/93	Harari	365	218	
	AB'	5,293,560	03/08/94	Harari	365	185	
	AC'	5,321,655	06/14/94	Iwahashi et al.	365	200	
	AD'	5,351,210	09/27/94	Saito	365	189.01	
	AE'	5,422,845	06/06/95	Ong	365	185	
	AF'	5,432,735	07/11/95	Parks et al.	365	168	
	AG'	5,434,825	07/18/95	Harari	365	185	
	AH'	5,440,505	08/08/95	Fazio et al.	365	45	
	AI'	5,444,656	08/22/95	Bauer et al.	365	189.01	
	AJ'	5,450,363	09/12/95	Christopherson et al.	365	205	
	AK'	5,457,650	10/10/95	Sugiura et al.	365	184	

FOREIGN PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Country	Class	Sub-class	Translation
	AL'						
	AM'						
	AN'						
	AO'						
	AP'						
	AQ'						

OTHER DOCUMENTS (including references cited by applicant)

	AR'	
	AS'	
	AT'	

Examiner

Date Considered

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449

LIST OF DOCUMENTS CITED BY APPLICANT

Atty. Docket No.

A-8753X

Serial No.

Applicant

Gerald J. BANKS

Filing Date

Herewith

Group

U.S. PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Name	Class	Sub-class	Filing Date
	AA~	5,469,384	11/21/95	Lacey	365	185.13	
	AB~	5,475,693	12/12/95	Christopherson et al.	371	10.2	
	AC~	5,485,422	01/16/96	Bauer et al.	365	168	
	AD~	5,497,119	03/05/96	Tedrow et al.	327	540	
	AE~	5,506,813	04/09/96	Mochizuki et al.	365	230.03	
	AF~	5,508,958	04/16/96	Fazio et al.	365	185.19	
	AG~	5,515,317	05/07/96	Wells et al.	395	427	
	AH~	5,523,972	06/04/96	Rashid et al.	365	185.22	
	AI~	5,539,690	07/23/96	Talreja et al.	365	185.22	
	AJ~	5,541,886	07/30/96	Hasbun	365	230.01	
	AK~	5,544,118	08/06/96	Harari	365	218	

FOREIGN PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Country	Class	Sub-class	Translation
	AL~						
	AM~						
	AN~						
	AO~						
	AP~						
	AQ~						

OTHER DOCUMENTS

	AR~	
	AS~	
	AT~	

Examiner

Date Considered

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449

LIST OF DOCUMENTS CITED BY APPLICANT

Atty. Docket No.

A-8753X

Serial No.

Applicant

Gerald J. BANKS

Filing Date

Herewith

Group

U.S. PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Name	Class	Sub-class	Filing Date
	AA❖	5,550,772	08/27/96	Gill	365	185.03	
	AB❖	5,568,439	10/22/96	Harari	365	218	
	AC❖	5,583,812	12/10/96	Harari	365	185.33	
	AD❖	5,594,691	01/14/97	Bashir	365	189.09	
	AE❖	5,596,527	01/21/97	Tomioka et al.	365	185.20	
	AF❖	3,660,819	05/02/72	Frohman-Bentchkowsky	317	235R	
	AG❖	5,295,255	03/15/94	Malecek et al.	395	425	
	AH❖						
	AI❖						
	AJ❖						
	AK❖						

FOREIGN PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Country	Class	Sub-class	Translation
	AL❖						
	AM❖						
	AN❖						
	AO❖						
	AP❖						
	AQ❖						

OTHER DOCUMENTS

	AR❖	
	AS❖	
	AT❖	

Examiner

Date Considered

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449

LIST OF DOCUMENTS CITED BY APPLICANT

Atty. Docket No.

A-8753X

Appln. No.

Applicant

Gerald J. BANKS

Filing Date

Herewith

Group

U.S. PATENT DOCUMENTS

[illegible]

Examiner

Date Considered

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449

LIST OF DOCUMENTS CITED BY APPLICANT

Atty. Docket No.

A-8753X

Appln. No.

Applicant

Gerald J. BANKS

Filing Date

Herewith

Group

U S PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Name	Class	Sub-class	Filing Date
	AO	3,755,721	8/28/73	Frohman-Bentchkowsky	317	235R	
	AP	5,021,999	6/4/91	Kohda et al.	365	168	
	AQ	4,903,236	2/20/90	Nakayama et al.	365	185	
	AR	5,394,362	2/28/95	Banks	365	189.01	
	AS	5,764,571	6/9/98	Banks	365	189.01	

OTHER (including author's abstracts, pertinent papers, etc.)

	AS	Intel Corporation. "2764A Advanced 64K (8K x 8) Production and UV Erasable PROMs." Memory Components Handbook. (October 1985) : 4.10-4.20.
	AT	Alberts, G.S., and Kotecha, H.N. "Multi-Bit Storage FET EAROM Cell." IBM Technical Disclosure Bulletin, Vol. 24, No. 7A. (December 1981) : 3311-3314.
	AU	Blyth, Trevor, et al. "TPM 11.7: A Non-Volatile Analog Storage Device Using EEPROM Technology." 1991 IEEE International Solid-State Circuits Conference, Digest of Technical Papers. (February 1991) : 192-193 and 315.
	AV	Donoghue, Bill, et al. "A 256K HCMOS ROM Using a Four-State Cell Approach." IEEE Journal of Solid-State Circuits, Vol. SC-20, No. 2. (April 1985) : 598-602.
	AW	"Mid-Level Current Generator Circuit", IBM Technical Disclosure Bulletin, Vol. 33, No. 1B, 1 June 1990, pp. 386-388

Examiner

Date Considered

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449

LIST OF DOCUMENTS CITED BY APPLICANT

Atty. Docket No.

A-8753X

Appln. No.

Applicant

Gerald J. BANKS

Filing Date

Herewith

Group

U.S. PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Name	Class	Sub-class	Filing Date
	AA	5,200,920	04/06/93	Norman et al.	365	185	
	AB	Re 32,401	04/14/87	Belistein, Jr. et al	365	182	
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						

FOREIGN PATENT DOCUMENTS

Examiner Initial		Document Number	Date	Country	Class	Sub-class	Translation
	AL	56-114199	09/08/81	Japan			No
	AM	61-239497	10/24/86	Japan			No
	AN	61-239498	10/24/86	Japan			No
	AO	62-24499	02/02/87	Japan			No
	AP	1-159895	06/22/89	Japan			No
	AQ						

OTHER (including Author, Title, Date, Government, Page)

	AR	Torelli, Guido et al., "An Improved Method for Programming a Word-Erasable EEPROM", <u>Alta Frequenza - Scientific Review in Electronics</u> , Vol. LII, No. 6, Pages 487-494 (1983).
	AS	Yoshikawa, Kuniyoshi et al., "An Asymmetrical Lightly-Doped Source (ALDS) Cell for Virtual Ground High Density EPROMs", <u>IEEE International Electron Devices Meeting</u> , 1988, Pages 432-435.

Examiner

Date Considered

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

FORM PTO-1449				Atty. Docket No.		Appln. No.	
LIST OF DOCUMENTS CITED BY APPLICANT				A-8753X			
				Applicant			
				Gerald J. BANKS			
				Filing Date		Group	
				Herewith			
U.S. PATENT DOCUMENTS							
Examiner Initial		Document Number	Date	Name	Class	Sub- class	Filing Date
	AA	4,809,224	02/28/89	Suzuki et al.	365	168	
	AB	5,872,735	02/16/99	Banks	365	189.01	
	AC	6,002,614	12/14/99	Banks	365	189.01	
	AD	6,104,640	08/15/00	Banks	365	189.01	
	AE	6,011,716	01/04/00	Banks	365	185.03	
	AF	6,014,327	01/11/00	Banks	365	185.03	
	AG	6,118,692	09/12/00	Banks	365	185.03	
	AH	6,246,613	06/12/01	Banks	365	189.01	
	AI	6,243,321	06/05/01	Banks	365	233	
	AJ	6,343,034	01/29/02	Banks	365	189.00	
	AK	6,356,486	03/12/02	Banks	365	189.01	
	AL	6,353,554	03/05/02	Banks	365	185.03	
	AM	6,339,545	01/15/02	Banks	365	185.03	
	AN	6,324,121	11/27/01	Banks	365	185.03	
	AO	6,327,189	12/04/01	Banks	365	189.01	
	AP	6,404,675	06/11/02	Banks	365	185.03	
	AQ	6,344,998	02/05/02	Banks	365	185.22	
	AR	6,434,050	08/13/02	Banks	365	185.2	
	AS	6,381,172	04/30/02	Banks	365	185.03	
	AT	2003/0202378	10/30/03	Banks	365	185.03	
FOREIGN PATENT DOCUMENTS							
Examiner Initial		Document Number	Date	Country	Class	Sub- class	Translation
	AT						
OTHER (including author, title, date, pertinent pages, etc.)							
	AU						
Examiner				Date Considered			
EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.							